

**DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below under my name.

I believe that I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled

**ASSAYS FOR SCREENING COMPOUNDS WHICH INTERACT WITH  
CATION CHANNEL PROTEINS, MUTANT PROKARYOTIC CATION  
CHANNEL PROTEINS, AND USES THEREOF**

the Specification of which

[ ] is attached hereto  
[X] was filed on March 24, 1999  
as Application Serial No. 09/275,252

I hereby state that I have reviewed and understand the contents of the above-identified Specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any provisional application filed in the United States in accordance with 35 U.S.C.

§1.119(e), or any application for patent that has been converted to a Provisional Application within one (1) year of its filing date, or any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

<u>APPLICATION NUMBER</u>	<u>PRIOR FILED APPLICATION(S)</u>	<u>COUNTRY (DAY/MONTH/YEAR FILED)</u>	<u>PRIORITY CLAIMED</u>
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I hereby claim the benefit under Title 35, United States Code, §120 of any United States application listed below, and, insofar as the subject matter of each of the claims of this application is not disclosed in any prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a), which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

<u>APPLICATION NO.</u>	<u>FILING DATE (DAY/MONTH/YEAR)</u>	<u>STATUS - PATENTED, PENDING, ABANDONED</u>
09/054,347	02 APRIL 1998	ABANDONED
09/045,529	20 MARCH 1998	ABANDONED

I hereby appoint as my attorneys or agents the following persons: Jack Matalon, (Attorney, Registration No. 22,441); Stefan J. Klauber (Attorney, Registration No. 22,604); David A. Jackson (Attorney, Registration No. 26,742); Michael D. Davis (Attorney, Registration No. 39,161); Christine E. Dietzel (Agent, Registration No. 37,309); William C. Coppola (Attorney, Registration No. 41,686); Mark S. Cohen (Attorney, Registration No. 42,425); Donald J. Cox, Jr. (Attorney, Registration No. 37,804); Steven B. Stein (Attorney, Registration No. 43,159); Yuan Kong (Agent, Registration No. 43,728); and Michael A. Yamin (Agent, Registration No. 44,414), said attorneys or agents with full power of substitution and revocation to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Please address all correspondence regarding this application to:

DAVID A. JACKSON, ESQ.  
 KLAUBER & JACKSON  
 411 HACKENSACK AVENUE  
 HACKENSACK, NEW JERSEY 07601

Direct all telephone calls to David A. Jackson at (201) 487-5800.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF SOLE INVENTOR : RODERICK MACKINNON

COUNTRY OF CITIZENSHIP : United States

FULL RESIDENCE ADDRESS : 504 E. 63rd Street  
 Apt. 30-0  
 New York, New York 10021

FULL POST OFFICE ADDRESS : 504 E. 63rd Street  
 Apt. 30-0  
 New York, New York 10021

SIGNATURE OF INVENTOR Roderick Mackinnon

DATE May 12, 1999



**UNITED STATES DEPARTMENT OF COMMERCE**

**Patent and Trademark Office**

ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

OCTOBER 27, 1999

PTAS

KLAUBER & JACKSON  
DAVID A. JACKSON  
411 HACKENSACK AVENUE, 4TH FLOOR  
HACKENSACK, NJ 07601



\*101128562A\*

**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT**

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 08/25/1999

REEL/FRAME: 010189/0199  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNEE'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNEE:

HOWARD HUGHES MEDICAL INSTITUTE

DOC DATE: 07/26/1999

ASSIGNEE:

ROCKEFELLER UNIVERSITY, THE  
1230 YORK AVENUE  
NEW YORK, NEW YORK 10021-6399

SERIAL NUMBER: 09275252

FILING DATE: 03/24/1999  
ISSUE DATE:

SHAREILL COLES, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

08-27-1999

FORM PTO-1595  
(Rev. 6/93)

U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office

F 101128562  
PATENTS ONLY

IEET

Attorney Docket No. 600-1-220 CIP 1

8.25.99

To the Assistant Commissioner for Patents

## 1. Name of conveying party(ies):

Howard Hughes Medical Institute

Additional name(s) of conveying party(ies) attached? [ ] Yes [x] No

## 3. Nature of conveyance:

Assignment       Merger  
 Security Agreement       Change of Name

Other: \_\_\_\_\_

Execution Date: July 26, 1999

## 2. Name and address of receiving party(ies):

Name: The Rockefeller University

Address: 1230 York Avenue

New York, New York 10021-6399

Additional name(s) &amp; address(es) attached? [ ] Yes [x] No

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s)

09/275,252

B. Patent No.(s)

Additional numbers attached? [ ] Yes [x] No

## 5. Name and address of party to whom correspondence concerning document should be mailed:

Name: David A. Jackson

Address: KLAUBER & JACKSON  
 411 Hackensack Avenue, 4th Floor  
 Hackensack, New Jersey 07601

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$ 40.00

 Enclosed Authorized to be charged to deposit account, if necessary -  
for overages or underpayments only

## 8. Deposit account number:

11-1153

(Attach duplicate copy of this page if paying by deposit account)

08/27/1999 DOCTYPES 00000010 09275252

-01 F6:581

40.00 OP

DO NOT USE THIS SPACE

## 9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

Michael A. Yamin, Reg. No. 44,414  
 Name of Person Signing

Signature

Date

Total number of pages including cover sheet, attachments, and document: 3

Mail documents to be recorded with required cover sheet information to:

Assistant Commissioner for Patents  
 Box Assignments  
 Washington, D.C. 20231

## ASSIGNMENT

Assignment made July 26, 1999 by the Howard Hughes Medical Institute, a Delaware Corporation, having a principal business address of 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789 (the "Institute"), to The Rockefeller University, an education corporation organized and existing under the laws of the State of New York, with offices at 1230 York Avenue, New York, New York 10021-6399 ("Rockefeller").

### Recitals

WHEREAS, the Institute and Rockefeller collaborate in the active conduct of medical research pursuant to a Collaboration Agreement between them dated as of August 12, 1986 (the "Collaboration Agreement");

WHEREAS, pursuant to the Collaboration Agreement, the Institute has agreed to assign to Rockefeller the Institute's rights with respect to inventions, discoveries, improvements, and other intellectual property, whether patentable or copyrightable (each a "subject property"), conceived or reduced to practice in the course of the research program conducted under the Collaboration Agreement by employees of the Institute; and

WHEREAS, research conducted pursuant to the Collaboration Agreement by Roderick MacKinnon while employed by the Institute at Rockefeller has resulted in an invention entitled "Assays For Screening Compounds Which Interact With Cation Channel Proteins, Mutant Prokaryotic Cation Channel Proteins, and Uses Thereof" (the Invention").

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged by the Institute, the Institute agrees as follows:

1. Assignment. The Institute hereby assigns to Rockefeller any and all right, title, and interest of the Institute; any United States patent applications and all corresponding foreign patent applications, which are directed to the Invention (including without limitation, the patent application entitled "Assays For Screening Compounds Which Interact With Cation Channel Proteins, Mutant Prokaryotic Cation Channel Proteins, and Uses Thereof" filed in the United States Patent and Trademark Office on March 24, 1999, and assigned U.S. Serial No. 09/275,252), and any and all patents issued therefrom; all United States or foreign divisions and continuations based on any of the foregoing, and any and all patents issued

therefrom; and all claims which are directed to the Invention and are contained in continuation-in-part applications or in patents which issue therefrom; all in accordance with and subject to the provisions of the Collaboration Agreement (including, without limitation, Section 4.1 thereof); and further authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid to issue all Letters Patent for the Invention to Rockefeller.

2. Cooperation. The Institute agrees to execute upon request such further assignments, documents, and other instruments as may be necessary or desirable fully and completely to assign the Institute's interests in the Invention to Rockefeller and to assist Rockefeller in applying for, obtaining, and enforcing patents, copyrights, or other rights in the United States and in any foreign country with respect to any such Invention.

HOWARD HUGHES MEDICAL INSTITUTE

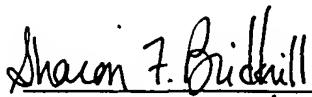
By: 

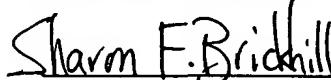
W. Maxwell Cowan, M.D., Ph.D.

Vice President and Chief Scientific Officer

State of Maryland  
Montgomery County

Then personally appeared before me the above-named W. MAXWELL COWAN, known to me to be the Vice President and Chief Scientific Officer of the Howard Hughes Medical Institute, and acknowledged that he executed the foregoing instrument as the free act and deed of the Howard Hughes Medical Institute, and that he was authorized to execute said instrument, this 26<sup>th</sup> day of July, 1999.

 Notary Public

 Print Name

My Commission Expires 3/1/00

SHARON F. BRICKHILL  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires March 1, 2000

890-1-220 CIP 1



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

AUGUST 30, 1999

PTAS

KLAUBER & JACKSON  
DAVID A. JACKSON  
411 HACKENSACK AVE.  
4TH FLOOR  
HACKENSACK, NJ 07601



\*101080003A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

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RECORDATION DATE: 06/25/1999

REEL/FRAME: 010054/0399  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNEE'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNEE:

MACKINNON, RODERICK  
HOWARD HUGHES MEDICAL INSTITUTE  
4000 JONES BRIDGE ROAD  
CHEVY CHASE, MARYLAND 20815-6789

DOC DATE: 05/13/1999

SERIAL NUMBER: 09275252

FILING DATE: 03/24/1999  
PATENT NUMBER:

SHARON LATIMER, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

06-30-1999

FORM PTO-1595  
(Rev. 6/93)

101080003

Attorney Docket No. 600-1-220 CIP 1

RECORDATION FORM COVER SHEET  
PATENTS ONLY

To the Assistant Commissioner for Patents

## 1. Name of conveying party(ies):

Roderick MacKinnon

Additional name(s) of conveying party(ies) attached? [ ] Yes [x] No

## 3. Nature of conveyance:

Assignment       Merger  
 Security Agreement       Change of Name

Other: \_\_\_\_\_

Execution Date: May 13, 1999

## 2. Name and address of receiving party(ies):

Name: Howard Hughes Medical InstituteAddress: 4000 Jones Bridge RoadChevy Chase, Maryland 20815-6789

Additional name(s) &amp; address(es) attached? [ ] Yes [x] No

6-28-99

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s)

09/275,252

B. Patent No.(s)

Additional numbers attached? [ ] Yes [x] No

## 5. Name and address of party to whom correspondence concerning document should be mailed:

Name: David A. JacksonAddress: KLAUBER & JACKSON  
411 Hackensack Avenue, 4th Floor  
Hackensack, New Jersey 076016. Total number of applications and patents involved: 17. Total fee (37 CFR 3.41): \$ 40.00 Enclosed Authorized to be charged to deposit account, if necessary -  
for overages or underpayments only

## 8. Deposit account number:

11-1153

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

## 9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*Michael D. Davis, Reg. No. 39, 161  
Name of Person SigningMichael D. Davis  
Signature6/22/99  
DateTotal number of pages including cover sheet, attachments, and document: 3

Mail documents to be recorded with required cover sheet information to:

Assistant Commissioner for Patents  
Box Assignments  
Washington, D.C. 20231

## ASSIGNMENT

Assignment made 5/13, 1999, by Roderick MacKinnon, a citizen of the United States, residing at 504 E. 63<sup>rd</sup> Street, Apt. 30-0, New York, New York 10021; , ("Inventors"), to the Howard Hughes Medical Institute, a Delaware corporation, having a principal business address at 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789 (the "Institute").

## RECITALS

WHEREAS, Inventor is an employee of the Institute and, as a condition of his employment, has signed the Agreement appended to the Institute's Statement of Policy on Intellectual Property (the "Intellectual Property Agreement");

WHEREAS, pursuant to the Intellectual Property Agreement, Inventor has agreed (a) to assign to the Institute all rights he may acquire in any invention, discovery, improvement, or other intellectual property, whether or not patentable or copyrightable, developed directly or indirectly as a result of a program of research financed by Institute funds or by funds under the control of the Institute (each a "Subject Property") and (b) to execute any agreements that may be desired by the Institute in connection with such assignment;

WHEREAS, the Inventor has, alone or with others, invented "Assays For Screening Compounds Which Interact With Cation Channel Proteins, Mutant Prokaryotic Cation Channel Proteins, and Uses Thereof" (the "Invention"), and the Invention is a Subject Property; and

WHEREAS, Inventor seeks to make a formal assignment of his interest in the Invention to the Institute, and the Institute desires the execution of a formal assignment of all of Inventor's right, title and interest in the Invention.

NOW, THEREFORE, in consideration of the promises contained in and the acts performed and to be performed pursuant to the Intellectual Property Agreement and of other good and valuable consideration, the receipt of which is hereby acknowledged by Inventor, Inventor agree as follows:

1. Assignment. Inventor hereby assigns to the Institute his entire right, title and interest in the Invention, any United States patent applications and all corresponding foreign patent applications which are directed to the Invention (including, without limitation, the Patent Application entitled "Assays For Screening Compounds Which Interact With Cation Channel Proteins, Mutant Prokaryotic Cation Channel Proteins, and Uses Thereof" filed in the United States Patent and Trademark Office on March 24, 1999 with Serial Number 09/275,252), and any and all patents issued therefrom; all United States or foreign division and continuation applications based on any of the foregoing, and any and all patents issued therefrom

and all claims which are directed to the Invention and which may be contained in continuation-in-part applications or in patents which issue therefrom.

2. Cooperation. Inventor agrees to execute upon request such further assignments, documents, and other instruments as may be necessary or desirable to assign Inventor's entire right, title, and interest in the Invention to the Institute and to assist the Institute (or others at the direction of the Institute) in applying for, obtaining, and enforcing patents, copyrights, or other rights in the United States and in any foreign country with respect to the Invention.

3. Parties. The terms and provisions of this Assignment shall inure to the benefit of the Institute and its successors and assigns and shall be binding on the Inventor and his heirs, personal representatives and assigns.

4. Warranty. Inventor warrants and represents that he has not entered into any assignment, contract, or understanding in conflict herewith, and that there is no other person or entity whose consent is required in order for the Inventor to make the assignment contained herein.

Inventor:

*Roderick MacKinnon*

Roderick MacKinnon

State/Commonwealth of N.Y.  
County of N.Y.

Then personally appeared before me the above-named Roderick MacKinnon and acknowledged that he executed the foregoing instrument as his free act and deed this 63 day of May, 1999.

*Teresa L. Solomon* Notary Public

(SEAL)

Print Name

My Commission expires ///

TERESA L. SOLOMON  
Notary Public, State of New York  
No. 31-4989836  
Qualified in New York County 1999  
Commission Expires Dec. 16, 1999